

REMARKS

In response to the restriction requirement, Applicant hereby elects Claims 1-20. Claims 21-23 have been canceled. Applicant preserves its right to pursue a divisional application for the subject matter of Claims 21-23.

Claims 1-3, 5, 8-13, 15, and 18-20 were rejected under Section 102 as being anticipated by Vidal. Each of the independent claims have been amended to further define over this reference. Specifically, Claim 1 has been amended to further recite the particular arrangement of the claimed elements to make it clear that the claimed lateral containment elements include wing walls that extend laterally away from respective ends of the sill and laterally beyond the roadway, and further that mechanically stabilized earth fills gaps defined by spaces between the wing walls, the respective ends of the sill, and edges of the roadway. A review of Vidal clearly shows that no such structure is shown or suggested. The Examiner stated that the claimed lateral containment elements corresponded to the wing walls of Vidal at 18, 20, and 22. With the amendment to Claim 1, it is clear that the claimed lateral containment elements not only extend laterally away from the respective ends of the sill, but that they also extend laterally beyond the roadway whereby then mechanically stabilized earth may fill gaps defined by spaces between the wing walls, the ends of the sill, and edges of the roadway. This feature of the invention is shown in Figure 4 wherein the lateral containment elements are designated by reference no. 26. In Vidal, any earth that is stabilized by the wing walls 18, 20 and 22 actually form the bounds of the roadway itself, or earth directly below the sill. At column 6, lines 29-35, Vidal also clearly discloses the purpose of the walls 18, 20 and 22:

“In accordance with the present invention this part of a design is dictated by architectural considerations as distinguished from structural considerations. Accordingly, it will be noted that the walls 18, 20, 22 are non-load bearing in the sense that they support only their own weight and not the bridge deck means”.

Thus, it is clear that by the amendment of Claim 1 which further defines the location and structure associated with the lateral containment elements, along with the clear statement in Vidal concerning the purpose of walls 18, 20 and 22, that Claim 1 distinguishes over this reference. As for independent Claim 11, it is also been amended to further clarify the invention to more positively

recite the design requirements resulting in limiting lateral displacement of the bridge. Accordingly, the “wherein” clause must be given patentable weight because it positively recites the design consideration set forth in the description regarding the manner in which the claimed means for limiting lateral displacement is provided. As mentioned directly above, Vidal expressly teaches away from the walls 18, 20, and 22 being any type of load bearing members, much less members that are designed to handle any type of lateral displacement occurring during a seismic event.

New independent Claim 24 is provided which specifically claims the embodiment of the invention shown in Figure 11 wherein specifically designed concrete blocks 60 are used as the lateral containment elements to prevent undesirable lateral displacement of the bridge. As with independent Claim 11, independent Claim 24 also positively incorporates a design limitation wherein the lateral containment elements are designed to handle horizontal loads caused by a seismic event.

New independent Claim 26 also is distinguishable over Vidal as it also positively claims the requirement to provide means for limiting lateral displacement of the bridge through structure which is able to handle seismic events.

New independent Claim 28 claims an abutment system comprising a facing wall, a retaining enclosure, and a plurality of piles positioned around and spaced from a front face of the abutment to prevent scour. The scour micro-piles 50 shown at Figures 9 and 10 are additional features of the invention which are not taught or disclosed by the prior art of record. Each of the piles shown in the prior art are actually attached to the abutment or structure of the bridge. The scour micro-piles 50 of the present invention help to prevent scour of a body of water, such as a river or stream, which flows between abutments. These micro-piles along with abutments form an abutment system which ensures that the underlying soil/rock around the abutment does not erode away, thereby maintaining the integrity of the abutment for supporting a bridge.

Based upon the foregoing, each of the independent claims contain limitations which clearly distinguish over Vidal; therefore, the rejection under Section 102 should be withdrawn.

Claims 4 and 14 were rejected under Section 103 as being unpatentable over Vidal and further in view of Geisel. Claims 4 and 14 depend directly from Claims 1 and 11. Geisel clearly fails to remedy the deficiencies set forth above with regard to the discussion of Vidal. Nonetheless,

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Applicant disagrees with the Applicant's contention that Geisel would otherwise obviate the subject matter of Claims 4 and 14. Geisel teaches the use of piles 11 and 12 which extend below and are connected to the footers or base of an abutment, and there is no teaching or suggestion to use these type of piles with respect to lateral containment devices. Therefore, this rejection under Section 103 should be withdrawn.

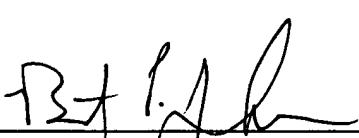
Claims 6, 7, 16 and 17 were rejected under Section 103 as being unpatentable as Vidal, and further in view of the U.S. Patent No. 4,564,967, also to Vidal. Vidal '967 clearly fails to remedy the deficiency set forth above with respect to discussion of Vidal '038. Furthermore, Applicant also traverses the Examiner's rejection that Vidal '967 otherwise obviates the subject matter of Claim 6, 7, 16 and 17. Claims 6 and 16 have been amended to clarify the claimed structure which corresponds to the scour micro-piles 50 shown in Figures 9 and 10. These micro-piles are positioned around and spaced from a front face of the abutment to prevent scour. In Vidal '967, the pile 2 shown therein actually supports the sill 3, and therefore is not positioned around and spaced from a front face of the abutment. Therefore, this rejection should also be withdrawn.

Applicant has made a sincere effort to place this application in a condition for allowance, therefore, such favorable action is earnestly solicited.

Respectfully submitted,

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